

Claims:

1. A method for manufacturing an electronic module, the method comprising:

- 5 – taking a conductive layer,
- taking a component, which has a contact surface, which has contact zones,
- 10 – gluing the component, from the side of the contact surface, to the first surface
 of the conductive layer,
- making an insulating-material layer, which surrounds the component glued to
 the conductive layer, on the first surface of the conductive layer,
- 15 – making feed-throughs for connecting the contact zones of the component
 electrically to the conductive layer, and
- making conductive patterns from the conductive layer.

20 2. A method according to Claim 1, in which, when gluing the component:

- an adhesive layer is spread on the surface of the conductive layer, and
- the contact surface of the component is pressed into the adhesive layer.

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3. A method according to Claim 1, in which, when gluing the component:

- adhesive layers are spread on the contact surface of the component and the
 first surface of the conductive layer, and
- 30 – the adhesive layers are pressed against each other.

4. A method according to Claim 2 or 3, in which at least one component is glued to the conductive layer and an adhesive layer is spread on areas of the surface of the conductive layer, in such a way that the surface of the conductive layer is essentially free of adhesive outside of the connection zones of the components.

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5. A method according to Claim 1, in which, when gluing the component:

- an adhesive layer is spread on the contact surface of the component, and

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- the adhesive layer on the surface of the component is pressed against the conductive layer.

6. A method according to any of Claims 1 - 5, in which

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- at least one alignment mark is made on the conductive layer, for the alignment of a component, and

- the component is glued to the conductive layer, aligned relative to the at least one alignment mark.

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7. A method according to Claim 6, in which at least one alignment mark is a through hole, which penetrates the conductive layer.

8. A method according to any of Claims 1 - 7, in which conductive patterns are made from the conductive layer by removing part of the material of the conductive layer, so that the remaining material forms the conductive patterns.

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9. A method according to any of Claims 1 - 8, in which openings are made in the conductive layer and the adhesive layer at the position of the contact zones of the component, in order to form feed-throughs.

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10. A method according to any of Claims 1 - 9, in which a support layer is attached to the

conductive layer, and is removed after the manufacture of the insulating-material layer, but before the manufacture of the conductive patterns.

5 11. A method according to any of Claims 1 - 10, in which the insulating-material layer surrounding the component is manufactured by attaching an insulating-material layer, in which recesses or cavities for a component or components have been made, to the conductive layer.

10 12. A method according to Claim 11, in which a second insulating-material layer, which is unified and which covers the component, is attached to the surface of the first insulating-material layer attached to the conductive layer.

15 13. A method according to any of Claims 1 - 12, in which a second conductive-pattern layer is manufactured on the opposite surface of the insulating-material layer.

14. A method according to any of Claims 1 - 13, in which a separate component, which is not connected to a circuit-board structure, is glued to the conductive layer.

20 15. A method according to any of Claims 1 - 14, in which more than one component is embedded in the electronic module in a corresponding manner.

16. A method according to Claim 15, in which the components embedded in the base are connected electrically to each other, in order to form a functional totality.

25 17. A method according to any of Claims 1 - 16, in which a first module is manufactured along with at least one second module and the manufactured modules are attached to each other one on top of the other, so that the modules are aligned relative to each other.

30 18. A method according to Claim 17, in which holes for feed-throughs are made through the modules that are attached on top of each other and conductors are made in the holes thus created, in order to connect the electronic circuits on each of the modules to each other to form a functional totality.

19. An electronic module, which includes

- an insulating-material layer, which has a first surface and a second surface,
- 5 – at least one hole or recess in the insulating-material layer, which opens out onto the first surface,
- 10 – at least one component inside the at least one hole or recess, which component includes contact zones on that side of the component that faces the first surface of the insulating-material layer, and which component is positioned in such a way that the contact zones are located at a distance from the level of the first surface of the insulating-material layer,
- 15 – a conductive-pattern layer, which runs on the first surface of the insulating-material layer and extends on top of the at least one hole or recess in the insulating-material layer and at the location of the contact zones of the components,
- 20 – a hardened adhesive layer in the hole or recess in the insulating-material layer, between the component and the conductive layer, and
- 25 – conductive-material formations penetrating the adhesive layer, for forming an electrical contact between the conductive-pattern layer and the contact zones of the component.

20. An electronic module according to Claim 19, in which the thickness of the component is less than the thickness of the insulating-material layer in the direction between the first surface and the second surface of the insulating-material layer.

30 21. An electronic module according to Claim 19 or 20, in which the said conductive-pattern layer is substantially flat, so that the surface of the conductive-pattern layer that lies against the insulating-material layer, and the hole or recess in the insulating-material

layer for the component, is located entirely at substantially the level of the first surface of the insulating-material layer.

5 22. An electronic module according to any of Claims 19 - 21, which includes a second conductive-pattern layer, which runs on the second surface of the insulating-material layer.

10 23. An electronic module according to any of Claims 19 - 22, which includes several components, which are connected electrically to each other by means of conductive patterns, in such a way that the components form a functional totality.